

IN THE CLAIMS

1. (original) An equipment area network (EAN) for a plurality of pieces of equipment, comprising:

a plurality of local controllers each being dedicated and connected to an individual one of said plurality of pieces of equipment, respectively;

a plurality of local Web servers each being dedicated and connected to an individual one of said plurality of controllers, respectively; and

local isolation means for selectively isolating said equipment area network from other networks outside of said equipment area network, said plurality of local Web servers being individually connected to said isolation means.

2. (original) The EAN of claim 1, further including: local browser means connected to said isolation means for selectively communicating with said plurality of local Web servers, and with remotely located Web servers in said other networks.

3. (original) The EAN of claim 1, wherein said plurality of local controllers each consist of a programmable logic controller.

4. (original) The EAN of claim 1, wherein said local isolation means includes a plurality of local router/switches each being connected to individual ones of said plurality of local Web servers respectively, and to at least one of said other networks.

5. (original) The EAN of claim 2, wherein said local isolation means includes a plurality of local router/switches each being connected to all of individual ones of said plurality of local controllers, respectively, to individual ones of said plurality of local browser means, respectively, and to at least one of said other networks.

6. (original) The EAN of claim 2, wherein said local browser means includes a plurality of Web browsers each being individually connected to said local isolation means.

7. (original) The EAN of claim 5, wherein said local browser means includes a plurality Web browsers, and said plurality of local router/switches are each connected to an individual one of said Web browsers, respectively.

8. (original) The EAN of claim 6, wherein said plurality of Web browsers each include: a PC; and Web browser software means for programming said PC to provide Web browser functions.

9. (original) The EAN of claim 7, wherein said plurality of Web browsers each include: a PC; and Web browser software means for programming said PC to provide Web browser functions.

10. (original) The EAN of claim 4, further including a plurality of Ethernet input/output modules connected to individual ones of said plurality of local router/switches, respectively.

11. (original) The EAN of claim 4, further including: said plurality of local router/switches each having a unique address, respectively; and said plurality of local Web servers each having the same network address.

12. (original) The EAN of claim 5, further including: said plurality of local router/switches each having a unique address, respectively; said plurality of local Web servers each having the same network address; and said local browser means includes a plurality of Web browsers each having the same address.

13. (original) The EAN of claim 11, further including a plurality of Ethernet input/output modules each having the same network address, and each being connected to individual ones of said plurality of local router/switches, respectively.

14. (original) The EAN of claim 12, further including a plurality of Ethernet input/output modules each having the same network address, and each being connected to individual ones of said plurality of local router/switches, respectively.

15. (original) The EAN of claim 1, wherein said plurality of local Web servers each further include means for providing Web pages identifying their associated piece of equipment, optionally its interconnection with other equipment included in the EAN, its present operating parameters, and other data of interest relative thereto.

16. (currently amended) An equipment area network (EAN) for a piece of equipment comprising:

~~at least one piece of equipment;~~

a controller dedicated and connected to said equipment;

a local Web server connected to said controller; and

isolation means connected to said Web server, for selectively isolating said EAN from other networks outside of said equipment,

wherein said EAN is dedicated to said equipment.

17. (original) The EAN of claim 16, further including a local HMI Web browser connected to said isolation means.

18. (original) The EAN of claim 16, wherein said controller is a programmable logic controller.

19. (original) The EAN of claim 16, wherein said isolation means consists of a router/switch.

20. (original) The EAN of claim 16, further including: said controller consisting of a programmable logic controller; and said isolation means consisting of a router/switch.

21. (original) The EAN of claim 17, wherein said local HMI Web browser includes: a PC; and Web browser software means for programming said PC to provide Web browser functions.

22. (original) The EAN of claim 16, wherein said local Web server includes means for providing Web pages identifying said piece of equipment, optionally its interconnection with

other equipment, its present operating parameters, and other data of interest relative thereto.

23. (currently amended) A method for providing an equipment area network (EAN) for each one or more pieces of equipment or devices, wherein for each local piece of equipment the method comprises the steps of:

connecting a local controller to the piece of equipment wherein said local controller is dedicated to said equipment;

connecting a local Web server to said controller;

connecting a local router between said Web server and a computer network, for providing isolation therebetween while allowing selective communication therebetween; and

assigning a unique network address to said router for devices outside the EAN,
wherein said EAN is dedicated to said equipment.

24. (original) The method of claim 23, further including the steps of: connecting at least one Ethernet based input/output module to said router for devices inside the EAN.

25. (original) The method claim 23, further including the steps of: connecting a spare port to said router for connection to one of the group consisting of a laptop computer, sub-systems of said equipment, and other devices inside the EAN.

26. (original) The method of claim 23, further including the step of: connecting a local HMI Web browser to said router.

27. (original) The method of claim 23, further including the steps of: assigning the same network address, if an address is required, to each controller associated with each piece of equipment; and assigning the same network address to each Web server associated with each piece of equipment.

28. (original) The method of claim 26, further including the steps of:

(A) configuring said router to receive requests from Web browsers both local and remote to said EAN;

(B) responding to a request from a Web browser by having said router check the source network address of the requesting browser;

(C) determining in response to a requesting local Web browser the destination network address it is requesting;

(D) configuring said router to respond to a destination network address for a remote Web server by using network address translation (NAT) to translate the associated source network address;

(E) forwarding via said router to said remote Web server an answer to the request;

(F) receiving via said router a response from said remote Web server that it received the answer; and

(G) forwarding the response to the associated said local Web browser of said EAN.

29. (original) The method of claim 28, further including after step (B) the steps of:

(H) determining in response to a requesting remote Web browser the destination network address it is requesting;

(I) ignoring the request in response to the destination network address being for a remote Web server;

(J) sending the request to the associated local Web server in response to the destination network address being that of another local Web server;

(K) Operating the associated local Web server to check the source network address of the Web browser making the request;

(L) responding to the request via the associated said local Web server using remote privileges if the source network address is that of a remote Web browser; and

(M) forwarding a response via the associated said local router to the requesting remote browser.

30. (original) The method of claim 29, further including after step (K) and before step (L) the step of: (N) authenticating via the associated said local Web server the password of the requesting remote Web browser.

31. (original) The method of claim 29, further including after step (K) the steps of:

(O) responding to the request via the associated said local Web server using local privileges if the source network address is that of a requesting local Web browser; and

(P) forwarding a response via the associated said local router to the requesting local browser.

32. (original) The method of claim 29, further including after step (K) and before step (O) the step of: authenticating via the associated said local Web server the password of the requesting local Web browser.